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BRAIN AND MIND.*

PROFESSOR WAITZ, in his *Introduction to Anthropology*, sadly complains that philosophy was going out of fashion in fatherland. There can, indeed, be no doubt that *à priori* philosophy is now under a cloud in Germany—the very country where it has received its most elaborate form. The modern German school sneers at speculative philosophy and looks upon a metaphysician as a sort of dealer in old curiosities.

We should be sorry to see the study of metaphysics altogether neglected; for we think that both the *d priori* and *d posteriori* methods applied to the elucidation of mental phenomena may well exist side by side and derive benefit from each other. Indeed, we very much doubt whether any person is fully competent to deal with “the mechanism of thought”, unless his studies have extended to both pure and experimental psychology. What has hitherto retarded the progress of mental, may be fairly ascribed to the fact that the philosophers knew little of physiology, while the physiologists disdained the study of philosophy.

The object our author had in view in writing the treatise bearing the above title was, as we gather from his preface, “to draw down psychology from the airy regions of philosophy and to place it upon the solid foundation of exact science; for a system of psychology not based upon physiology rests only upon the tottering foundation of personal opinions, fantastic dreams, and dogmatic prejudices.”

There are but few persons who at the present day deny that the brain is the material organ of the mind, and that mental phenomena are closely connected with the functions of the nervous system; whence it follows, that no exposition of psychology can be complete in which cerebral physiology does not enter as a prominent feature. “If,” says our author, “the functions of the brain and its parts were perfectly known to us, we should possess a knowledge of the fundamental faculties of the mind; but, unfortunately, the physiology of the brain† has hitherto yielded such scanty results, that but few of its materials can serve for a foundation of physiological psychology” (p. ix).

This poverty of materials does not, however, deter our author from making another attempt to place psychology upon “its natural soil”, viz., physiology.

* Gehirn und Geist, Entwurf einer physiologischen Psychologie für denkende Leser aller Stände, von Dr. Fh. Piderit.

† A succinct sketch of the present state of cerebral physiology appeared in the third number of the *Anthropological Review*.

"Two methods," says Dr. Piderit, "have been tried to trace the fundamental powers which manifest themselves in the ever varying mental phenomena.

"The philosophers tried speculation, the physiologists performed experiments on the organ of the mind. As neither of them succeeded in their efforts, I have tried another way—that of analogy. By comparing the brain with the spinal cord, I infer from similarity of structure, identity of function, and I assume that similar forces act in the brain as in the spinal cord. So long as physiological facts are wanting, we must rest satisfied with physiological probabilities, and if these are sufficiently explanatory they must be accepted until refuted by facts" (p. 41).

After giving a description of the development of the nervous centres from the so-called primitive groove, and shewing how the anterior portion of the groove dilates into three vesicals indicating the positions of the cerebellum, the mesencephalon, and the cerebrum, and proving that brain and spinal cord originate from the same elements, the author looks upon the brain only as a higher development of the primitive mass, and assumes that the fundamental forces of both are identical.

As the activity of the white substance of the spinal cord is partly perceptive and centripetal, and partly motor and centrifugal; so is it with the white substance of the brain. The sum of the afferent brain nerves he calls the organ of perception (*Vorstellung's organ*—representative or conceptive organ); the sum of the motor brain-nerves he terms the organ of the will. In the brain he observes the perceptive and motor nerves do not seem to be separated as in the spinal cord, but intimately interwoven. And just as the grey matter of the spinal cord establishes a reflex action between the perceptive and motor nerves, so the grey matter of the brain establishes a reflex action between the perceptive and motor nerves; but the influence of the organ of perception upon that of the will does not merely give rise to voluntary motions, but may be reflected back upon the organ of perception thereby causing it better to retain the perceptions and to produce thought. In short, mental activity is the result of the reciprocal action between the organ of perception and the will. "The perceptive capacity is the female element, the power of the will is the impregnating male element of the mind, and the ideas are the children of this mental act of generation" (p. 81).

It certainly seems a little strange, that an author who sets out by repudiating speculation and with the avowed aim of giving to psychology a more solid foundation, finishes by propounding a scheme of psychology resting not upon physiological facts, but simply upon "*analogy*". Moreover, the fundamental principle by which Dr. Piderit attempts to explain "the mechanism of thought" is not so

new as our author imagines. That reflex action is going on within the brain, as it is within the spinal cord, has long been assumed both by continental and English physiologists and applied by them to the elucidation of mental phenomena.

In 1844, Dr. Laycock read before the British Association a paper "On the Reflex Function of the Brain", from which we extract one of the opening passages.—

"Four years have elapsed since I published my opinion, supported by such arguments as I could then state, that the brain, although the organ of consciousness, was subject to the laws of reflex action, and that in this respect it did not differ from the other ganglia of the nervous system. I was led to this opinion by the general principle, *that the ganglia within the cranium being a continuation of the spinal cord, must necessarily be regulated as to shew reaction on external agencies by laws identical with those governing the functions of the spinal ganglia.*"

Many other authors might be cited to shew that the doctrine of the reflex action of the brain, as regards the evolution of perception and thought, has been long advocated. But whilst we cannot say that Dr. Piderit has added anything to our knowledge of cerebral physiology, we readily admit that his work contains a good deal of matter which will be novel and interesting to such readers as have not previously thought on the subject he discusses.

PRE-HISTORIC TIMES.*

MR. (now Sir John) LUBBOCK'S *Pre-Historic Times* is a collection of facts and inferences bearing on primitive archæology, and the probable antiquity and early condition of mankind on the earth. Papers on the "Danish Shell-Mounds," the "Swiss Lake-Dwellings," etc., which have appeared in the *Natural History Review*, and *Lectures on Archæology*, delivered at the Royal Institution, are incorporated in it with a quantity of new matter; and the whole forms a body of clear information, and discreet and moderate argument, on a number of obscure but highly interesting problems of our most ancient history.

Before giving some account of the contents of the work, we must, however, take notice of a passage which, of all things in it, we like the least. This is a note which, placed as it is conspicuously at the end of the preface, is sure to catch the reader's eye. "NOTE. In

* Prehistoric Times, as illustrated by Ancient Remains, and the Manners and Customs of Modern Savages. By John Lubbock, F.R.S., etc., etc. Williams and Norgate: 1855.